

CLAIMS

1. A lighting unit for a low-pressure mercury discharge lamp, comprising:

5 a rectifier/smoothing circuit module having a smoothing capacitor;

 an inverter circuit module;

 a resonance circuit module having a resonance capacitor;

 a board on which the circuit modules are disposed; and

10 an inrush current limiting resistor connected to an input end of the rectifier/smoothing circuit module, wherein

 a main body of the inrush current limiting resistor is in contact with or in proximity to a main body outer surface of at least one of the smoothing capacitor and the resonance
15 capacitor.

2. The lighting unit according to Claim 1, wherein

 the main body of the smoothing capacitor is farther away from the board than the main body of the resonant capacitor is
20 from the board, and

 the main body of the inrush current limiting resistor is in contact with or in proximity to the main body of the smoothing capacitor at an end farther away from the board, and in contact with or in proximity to the main body of the resonance capacitor
25 at an end closer to the board.

3. A low-pressure mercury discharge lamp, comprising:

 an arc tube;

a lighting unit operable to cause the arc tube to emit light;
a tubular case disposed to hold the arc tube and house the
lighting unit therein; and

a base disposed to cover an end of the case farther away
5 from where the arc tube is held; wherein

the lighting unit includes:

a rectifier/smoothing circuit module having a
smoothing capacitor;

an inverter circuit module;

10 a resonance circuit module having a resonance
capacitor;

a board on which the circuit modules are disposed;
and

an inrush current limiting resistor connected to an
15 input end of the rectifier/smoothing circuit module, and

a main body of the inrush current limiting resistor is in
contact with or in proximity to a main body outer surface of
at least one of the smoothing capacitor and the resonance
capacitor.

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4. The low-pressure mercury discharge lamp according to Claim
3, wherein

said at least one of the capacitors is the smoothing
capacitor,

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the smoothing capacitor and a choke coil that is included
in the resonance circuit module are aligned axially of the case,
with the choke coil disposed closer to the arc tube, and

the inrush current limiting resistor and the smoothing

capacitor are in contact with or in proximately to each other at the respective main body outer surfaces.

5. The low-pressure mercury discharge lamp according to Claim 4, wherein

the main body of the inrush current limiting resistor is in contact with or in proximity to the main body of the smoothing capacitor at an end farther away from the arc tube, and in contact with or in proximity to the main body of the resonance capacitor at an end closer to the arc tube.

6. The low-pressure mercury discharge lamp according to Claim 4, wherein

the case is composed of a small diameter portion to which the base is disposed, a large diameter portion being larger in diameter than the small diameter portion, and a tapered portion externally tapered from the small diameter portion to large diameter portion,

the board is disposed within the large diameter portion, so that a main surface of the board is perpendicular to the axis of the case, and

the main body of the smoothing capacitor is at least partially located within the base.

7. The low-pressure mercury discharge lamp according to Claim 5, wherein

the case is composed of a small diameter portion to which the base is disposed, a large diameter portion being larger in

diameter than the small diameter portion, and a tapered portion externally tapered from the small diameter portion to large diameter portion,

the board is disposed within the large diameter portion,
5 so that a main surface of the board is perpendicular to the axis of the case, and

the main body of the smoothing capacitor is at least partially located within the base.

10 8. The low-pressure mercury discharge lamp according to Claim 6, wherein

the inrush current limiting resistor has a pair of lead wires extending one from either end of the main body,

one of the lead wires extends through a space present between
15 the smoothing capacitor and an inner surface of the small diameter portion, and connects to the base, and

the inrush current limiting resistor is inserted within the space so as to be in contact with the smoothing capacitor.

20 9. The low-pressure mercury discharge lamp according to Claim 7, wherein

the inrush current limiting resistor has a pair of lead wires extending one from either of opposing ends of the main body,

25 one of the lead wires extends through a space present between the main body of the smoothing capacitor and an inner surface of the small diameter portion, and connects to the base, and

the inrush current limiting resistor is inserted within

the space so as to be in contact with the smoothing capacitor.

10. The low-pressure mercury discharge lamp according to Claim 6, wherein,

5 the main body of the resonance capacitor is inclined along the tapered portion, so as to be in contact with or in proximity to the inrush current resistor.

11. The low-pressure mercury discharge lamp according to Claim 10 7, wherein,

 the main body of the resonance capacitor is inclined along the tapered portion, so as to be in contact with or in proximity to the inrush current resistor.

12. The low-pressure mercury discharge lamp according to Claim 15 8, wherein

 the main body of the resonance capacitor is inclined along the tapered portion, so as to be in contact with or in proximity to the inrush current resistor.

20 13. The low-pressure mercury discharge lamp according to Claim 9, wherein

 the main body of the resonance capacitor is inclined along the tapered portion, so as to be in contact with or in proximity 25 to the inrush current resistor.

14. The low-pressure mercury discharge lamp according to any one of Claims 3-13, wherein

the case and the smoothing capacitor differ in heat-resistant temperature at least by 30°C.